Public Transit: Alternative Fuel Progress and Opportunities in New York City and Nationwide

The Challenges of Municipal Buses

Over the past decade, concern has been growing among government, environmental, health, and community leaders about the price Americans are paying for our reliance on diesel-fueled municipal buses. Diesel exhaust from these buses irritates the lungs and is a key aggravating factor in soaring rates of asthma nationwide; it is also widely recognized as a probable human carcinogen.

Heavy-duty diesel buses and trucks are responsible for 25 percent of smog-forming pollutants and 58 percent of the particulate matter generated by highway traffic in the U.S. Municipal bus depots are often sited in minority and economically disadvantaged communities, causing these communities to suffer disproportionately from health-related impacts of diesel bus emissions.

The Possibilities for Alternative Fuels

Public Transit operations have been a target for alternative fuel use, primarily due to health and environmental hazards caused by the diesel emissions generated from transit buses. Today, more than ever before, public transit agencies are taking advantage of the ever growing availability of off-the shelf bus technologies that operate on alternative fuels. Of the buses running on US roads today, less than 10% are powered by natural gas. However, this is changing--about 25% of all new buses on order are natural gas, and a number of fleets report that 100% of their new bus purchases will be natural gas. Assuming all potential orders are made, the percentage of natural gas buses in America's fleets will climb to 12.8% of the total by 2005. Electric transit buses also are used in some cities.

Compressed natural gas buses cost about $30,000 to $50,000 more than diesel buses, but the cost differentials are expected to decline as more vehicle models are produced. Even when these added costs are considered, transit buses can be an economical application of AFV technologies because of their operational characteristics, such centralized refueling/garaging and their high fuel usage. Because public transit agencies are heavily subsidized by governmental funding, the funding can be associated with a public mandate for cleaner air. Some public transit operators are opting to switch to clean fuels rather than alternative fuels

due to the long turn-over times of the buses (transit buses are typically in service for 10-12 years) and the cost of fueling infrastructure.

Spotlight on New York City

MTA-New York City Transit currently operates a fleet of 4,489 buses. 221 of these are CNG buses, and 10 are hybrid electric. While not an alternative fuel, the remainder of the fleet (approximately 4,250) is operating on ultra low sulfur diesel (ULSD), with conventional diesel having been phased out completely since September 2000. MTA –NYCT Transit has installed diesel particulate filters (DPFs) on approximately 1,000 buses and has committed to install DPFs on the entire diesel fleet by the end of 2003. MTA-NYCT has also committed to retire all pre-1993 two-stroke diesel engines from the bus fleet by the end of 2003, and in order to meet that commitment has already "repowered" more than 300 buses with new diesel engines equipped with exhaust gas recirculation and DPFs. MTA-NYC Transit currently has an additional 255 CNG buses and 325 hybrid electric buses on order, which will be delivered over the next two years. Beyond these buses on order, MTA –NYC Transit has committed to purchase an additional 50 hybrid electric buses and 170 CNG buses by 2005.

The New York City Department of Transportation also operates a fleet of CNG buses, which are operated by the City DOT franchise bus fleets, including Queens Surface (147 CNG buses), Command Bus (111 buses) and Triboro Coach (96 buses). Jamaica Bus and Green Bus have not yet been converted. Fueling stations are currently located at Queens Surface and at Triboro Coach, with facilities for NY Bus, Jamaica Bus and Green Bus in the design planning stages. The City DOT bus franchises cooperatively evaluated methanol buses with US EPA beginning in 1990. This served as a test fleet for both Detroit Diesel Corporation and US EPA. The first natural gas (CNG) buses entered service in 1991 and were conversions sponsored by the local gas utility. This experience led the City to acquire an additional 53 CNG and 12 methanol buses in 1994. In 1998/1999, 302 more CNG buses were purchased. The methanol bus program was later dropped as the engines and fuels were no longer being supported by the manufacturer. The City DOT has committed to purchasing only new CNG buses, and currently owns 354 CNG buses and plans to purchase approximately 350 additional CNG buses through 2005. The currently CNG fleet represents approximately 28% of the total DOT transit bust fleet.

Concerns about the health impacts of municipal buses and bus depots on the health of distressed communities is particularly acute in New York City, where a nonprofit organization, West Harlem Environmental Action (WE ACT), filed a Title VI complaint in November 2000 with the U.S. Department of Transportation stating that New York's Metropolitan Transportation Authority

(MTA) advances a racist, discriminatory policy of disproportionately siting diesel bus depots and diesel bus parking lots in minority neighborhoods in Manhattan. WE ACT has advocated the conversion of these facilities to natural gas, that all new MTA depots be compressed natural gas depots, and that the MTA continue to use clean fuel buses and depots in Harlem and Washington Heights.